Exhibit D: Estimated Future with and without project conditions at dredged material disposal sites, Columbia River Channel Improvement Study

COLUMBIA RIVER CHANNEL DEEPENING

GOVERNMENT AND SPONSOR DISPOSAL PLANS

PRESENT USE, FUTURE WITHOUT PROJECT AND FUTURE WITH PROJECT SITE CONDITIONS

HSI SPREADSHEETS

HABITAT MAPS

Hayden Island - 102 acres

Habitat Acreage: Dredged Material = 102 acres. Dredged material placement by the Port of Portland will have covered the 102 acre footprint prior to 2003; no wildlife habitat would be present at location when CRCD project construction is initiated.

Present Use: Pasture for livestock (cattle) and dredge material disposal site. Site is identified as disposal location for DMMS preferred alternative.

Future Without Project: Site will continue to be used for dredged material disposal. Site is slated for Port/industrial development.

Future With Project: Site impacts would be completed by Port prior to year 2003. Portion of 102 acre site would remain as rehandle area for O&M disposal of dredged material post-construction of CRCD project.

HEP Analysis: No HEP analysis for mitigation determination will be conducted for this location as habitat present will have been lost prior to CRCD construction start. Present and projected future use precludes wildlife use.

Sauvie 1 - 48 acres:

Habitat Acreage:

Agricultural cropland - 31.2 acres
Associated habitat - Agricultural cropland - 16.8 acres

Present Use: Commercial blackberry field; canes are on wires.

Future Without Project: Estimate that site will remain agricultural land for project life, e.g., 50 years. Cropping pattern will shift to cereal grain and row crop rotation over 50 year project life (2003-2004). Site may again be used for commerical blackberry production, however, to simplify evaluation, site use will be considered cereal grain/row crop rotation. An agricultural crop projection for site would be as follows:

2002: cereal grain production
2003: row crop; harvest in Sept.-Oct.; cereal grain planted in fall
2004: cereal grain harvest in August; site tilled and left unplanted (fallow)
2005: row crop; harvest in Sept.-Oct.; cereal grain planted in fall
2006: cereal grain harvest in August; grain stubble left standing until spring
2007: row crop; harvest in Sept.-Oct.; cereal grain planted in fall

Assume row crop = corn. Projected croping pattern would repeat itself for project life. It would be assumed that disturbance to wintering waterfowl would be moderate during fall-winter when site is in cereal grain planting; no or minimal disturbance when site condition in fall-winter is fallow ground or grain stubble.

Future With Project:

2003: Site used for dredged material disposal. Habitat values for site are lost in initial year of disposal use.

HEP Analysis: Species evaluated (HEP) for this disposal location were only those species identified for agriculture habitat. Habitat suitability indices used were those developed for agricultural lands. The Amphibian Associated Habitat HSI value of 0.21 was used for AH-AG acreage, e.g., those lands within 200m of a wetland, drainage ditch, or backwater channel. No Amphibian HSI value was assigned to agricultural habitat, i.e., AG, that occurred greater than 200 m from wetland type habitats. For other agricultural habitat target species, the HSI value for agricultural habitat was used for AH-AG acreage.

No increases or decreases in habitat acreage or HSI values for target species across target years were estimated. Retention of the site in agricultural production was assumed to hold HSI values and habitat acres static across target years.

Gateway 3: 93 acres

Habitat Acreage: Agricultural cropland – 15.3 acres in 2002.
Assoc. Habitat – Ag. Crop. – 61.2 acres in 2002.
Dredged Material (Industrial) – 16.5 acres in 2002.

Present Use: Commercial agriculture; cereal grains and field corn for silage. This area is currently zoned for industrial development.

Future Without Project: Information provided by Port of Vancouver projects that Gateway 3 would be fully commercially developed by the year 2016. The Port of Vancouver has developed a Master Plan for their lands, including the Gateway 3 location. It has been assumed that the Master Plan, to include Environmental Evaluation and Permitting, will have been completed by 2000 and industrial development will begin then. Land development is assumed to occur at a steady rate (e.g. approximately 5.5 acres per year). It is also assumed that agricultural land use practicies will continue on those lands not developed for industrial purposes. The net result would be industrial development of the entire 93 acre parcel by 2016.

Gateway 3

Year	Acres	Ag. Hab.	AH-AG	Developed
1999	93	18.6	74.4	0
2000	87.5	17.5	70	5.5
2001	82	16.4	65.6	11
2002	76.5	15.3	61.2	16.5
2003	71	14.2	56.8	22
2004	65.5	13.1	52.4	27.5
2005	60	12	48	33
2006	54.5	10.9	43.6	38.5
2007	49	9.8	39.2	44
2008	43.5	8.7	34.8	49.5
2009	38	7.6	30.4	55
2010	32.5	6.5	26	60.5
2011	27	5.4	21.6	66
2012	21.5	4.3	17.2	71.5
2013	16	3.2	12.8	77
2014	10.5	2.1	8.4	82.5
2015	5	1	4	88
2016	0	0	0	93.5

Future With Project: Dredged material disposal would occur initially in 2003; initial projections are 405,000 cy in 2003. Loss of all habitat value for the site would occur in 2003.

W-97.1 - 27 acres

Habitat Acreage:

Commercial sand/gravel operation - 27 acres

Present Use: Site is commercial sand/gravel operation. Site is identified as disposal location for DMMS preferred alternative.

Future Without Project: Site would remain as commercial sand/gravel operation for project life.

Future With Project: Site would remain as commercial sand/gravel operation for project life. Deposition of dredged material would begin in 2004 at this location.

HEP Analysis: No HEP analysis for mitigation determination will be conducted for this location. Present and projected future use precludes wildlife use.

W-96.9 - 17 acres

Habitat Acreage:

Associated habitat - Agricultural cropland - 8.2 acres
Dredged Material - 8.8 acres

Site abutted by road and Fazio Sand and Gravel commercial operation.

Present Use: Pasture for livestock (cattle) on 8.2 acres; balance used for feed lot for cattle.

Future Without Project: Site would remain as pasture for livestock (cattle) on 8.2 acres; balance used for feed lot for cattle, for project life.

Future With Project: Disposal would occur on site and destroy 8.2 acres of agricultural (pasture) habitat present. Disposal actions would be initiated in 2003.

HEP Analysis: HEP analysis for mitigation determination will be conducted for the 8.2 acres of agricultural pasture at this location; no mitigation will be considered for the dredged material portion of the property.

Species evaluated (HEP) for this disposal location were only those species identified for agriculture habitat. Habitat suitability indices used were those developed for agricultural lands. The Amphibian Associated Habitat HSI value of 0.21 was used for AH-AG acreage, e.g., those lands within 200m of a wetland, drainage ditch, or backwater channel. The 8.2 acres of AH-AG (pasture) were within 200 m of a wetland type. For other agricultural habitat target species, the HSI value for agricultural habitat was used for AH-AG acreage.

No increases or decreases in habitat acreage or HSI values for target species across target years were estimated. Retention of the site in agricultural production was assumed to hold HSI values and habitat acres static across target years.

W-96.5 - 25 acres

Habitat Acreage:

Associated habitat - Agricultural cropland - 25 acres

Present Use: Agricultural cropland; row crops and cereal grain.

Future Without Project: Site would remain as agricultural cropland; row crops and cereal grain, for the project life, e.g., 50 years.

Future With Project: Disposal would occur on site in 2006 and destroy habitat present. For HEP analysis purposes, loss of habitat value due to disposal actions has been assumed to occur in 2003 in order to simplify analysis.

HEP Analysis: HEP analysis for mitigation determination will be conducted for the 25 acres of agricultural lands at this location.

Species evaluated (HEP) for this disposal location were only those species identified for agriculture habitat. Habitat suitability indices used were those developed for agricultural lands. The Amphibian Associated Habitat HSI value of 0.21 was used for AH-AG acreage, e.g., those lands within 200m of a wetland, drainage ditch, or backwater channel. All 25 acres at this location were within 200 m of a wetland type. For other agricultural habitat target species, the HSI value for agricultural habitat was used for AH-AG acreage.

No increases or decreases in habitat acreage or HSI values for target species across target years were estimated. Retention of the site in agricultural production was assumed to hold HSI values and habitat acres static across target years.

W-95.7 - 25 acres

Habitat Acreage:

Associated habitat - Agricultural cropland - 6.9 acres
Agricultural cropland - 16.5 acres
Farmed wetland - 1.6 acres

Present Use: Agricultural cropland; row crops and cereal grain.

Future Without Project: Site would remain as agricultural cropland; row crops and cereal grain, for the project life, e.g., 50 years..

Future With Project: Disposal would occur on site in 2004 and destroy habitat present. For HEP analysis purposes, loss of habitat value due to disposal actions has been assumed to occur in 2003 in order to simplify analysis.

HEP Analysis: HEP analysis for mitigation determination will be conducted for the 25 acres of agricultural lands at this location

Species evaluated (HEP) for this disposal location were only those species identified for agriculture habitat. The farmed wetland habitat contained physical habitat characteristics of agricultural lands. Annual cultivation and drainage precludes establishment of wetland plants and habitat features, thereby precluding wildlife use by wetland species. Consequently, the farmed wetland was evaluated using agricultural habitat target species and habitat suitability values.

Habitat suitability indices used were those developed for agricultural lands. The Amphibian Associated Habitat HSI value of 0.21 was used for AH-AG acreage, e.g., those lands within 200m of a wetland, drainage ditch, or backwater channel. Portions of this location were within 200 m of a wetland type. For other agricultural habitat target species, the HSI value for agricultural habitat was used for AH-AG acreage.

No increases or decreases in habitat acreage or HSI values for target species across target years were estimated. Retention of the site in agricultural production was assumed to hold HSI values and habitat acres static across target years.

Scappoose Dairy - 107 acres

Habitat Acreage:

Associated habitat - Agricultural cropland - 75.8 acres
Farmed wetland - 23.5 acres
Wetland - 7.7 acres

Lands present at this dairy operation support alfalfa and grass crops for hay and silage or produce field corn for silage. Wintering waterfowl use occurs. Disturbance from grass and alfalfa fields estimated to be moderate; no scarecrows or propane cannons were observed.

Present Use: Current use of site is for forage production for dairy. Site abutted by road and dike along Multnomah Channel. Cropping pattern is based upon use pattern of four years alfalfa, two years corn, four years grass, two years corn (repeat cycle).

2003-2006: alfalfa
2007-2008: field corn
2009-2012: grass
2013-2014: field corn
2015-2018: alfalfa
2019-2020: field corn
2021-2024: grass
2025-2026: field corn
2027-2030: alfalfa
2031-2032: field corn
2033-2036: grass
2037-2038: field corn
2039-2042: alfalfa
2043-2044: field corn
2045-2048: grass
2049-2050: field corn
2051-2053: alfalfa

Future Without Project: Site would remain as part of current dairy operation.

Future With Project: Disposal would occur on site in 2003 and destroy habitat value present with initial use on the 107 acre disposal site.

HEP Analysis: HEP analysis for mitigation determination will be conducted for the agricultural and wetland habitat target species at this location. Agricultural and associated habitat - agricultural lands were evaluated using agricultural habitat target species and habitat suitability values. The farmed wetland habitat exhibited physical habitat characteristics of agricultural lands. Annual cultivation and drainage precludes establishment of wetland plants and habitat features, thereby precluding wildlife use by

wetland species. Consequently, the farmed wetland was evaluated using agricultural habitat target species and habitat suitability values.

Wetland habitat at this location was associated with a drainage ditch in the east-central portion of the disposal site. Drainage ditches along the western and southern borders of the disposal site do not lie within the boundaries of the disposal site. The habitat suitability indices for wetland habitat target species were used for evaluation of the wetland habitat.

Associated Habitat-Agriculture lands were evaluated using agricultural habitat target species and habitat suitability values. The Amphibian Associated Habitat HSI value of 0.21 was used for AH-AG acreage, e.g., those lands within 200m of a wetland, drainage ditch, or backwater channel. All lands at this location were within 200 m of a wetland type.

No increases or decreases in habitat acreage or HSI values for target species across target years were estimated. Retention of the site in agricultural production was assumed to hold HSI values and habitat acres static across target years.

Austin Point - 26 acres

Habitat Acreage:

Riparian - Degraded: 2.7 acres
Dredged Material: 23.3 acres

Present Use: Current use of site is for heavy equipment training school. Site abutted by road.

Future Without Project: It is assumed that site would remain in existing use pattern for the project life, e.g. heavy equipment school. The basis for the site to remain in its existing use pattern is the lack of infrastructure to support a port/industrial facility.

Future With Project: Disposal would occur on site in 2003 and destroy riparian habitat present.

HEP Analysis: HEP analysis for mitigation determination will be conducted for the 2.7 acres of riparian habitat at this location; no mitigation will be considered for the dredged material portion of the property.

Species evaluated (HEP) for this disposal location were only those species identified for the riparian category. Habitat suitability indices used for target species were based upon those developed for riparian habitat, but adjusted to 1/3 the HSI value determined via field sampling of riparian habitat variables. The adjustment in HSI value was based upon prior and present use of the riparian area at this location. Prior use was for a cattle stockyard; present use is for a heavy equipment school. These activities have substantially reduced the ground and shrub cover of the site, thus the adjustment in HSI values. Additionally, the riparian habitat present is situated on dredged material which will limit vegetative species diversity and structural complexity. This limitation is attributed to a lack of soil complexity and the well drained nature of sand in contrast to native soils. Consequently, HSI values for the riparian acreage were not increased over time.

No increases or decreases in riparian habitat acreage across target years were estimated. It was assumed that the continued presence of the heavy equipment school and their activities would preclude an increase in riparian habitat acreage.

Lonestar: 5 acres

Habitat Acreage: Associated habitat – Agriculture – 3 acres.
Riparian forest habitat – 2 acres.

Present Use: Riparian forest and agricultural land use.

Future Without Project: It is assumed that site would remain in existing use pattern for the project life.

Future With Project: Riparian and associated habitat - agriculture would be impacted in 2003 by construction and placement of dredged material pipeline.

W-82.0 - 32 acres

Habitat Acreage:
Riparian - Degraded: 2.9 acres
Dredged Material: 29.1 acres

Present Use: Current use of site is for cattle stockyard. Their presence adversely impacts riparian forest understory and recruitment of trees to the stand.

Future Without Project: Site would remain in current use pattern.

Future With Project: Disposal would occur on site in 2003 and destroy riparian habitat present.

HEP Analysis: HEP analysis for mitigation determination will be conducted for the 2.9 acres of riparian habitat at this location; no mitigation will be considered for the dredged material portion of the property.

Species evaluated (HEP) for this disposal location were only those species identified for riparian habitat. Habitat suitability indices used were those developed for riparian habitat, but adjusted to 1/3 the HSI value determined via field sampling of riparian habitat variables. The adjustment in HSI value was based upon prior and present use of the riparian area at this location. Prior use was for a cattle stockyard. The site continues to be used for a cattle stockyard. Cattle use of the location has substantially reduced ground and shrub cover and precluded tree recruitment, thus the adjustment in HSI values. Additionally, the riparian habitat present is situated on dredged material which will limit vegetative species diversity and structural complexity. This limitation is attributed to a lack of soil complexity and the well drained nature of sand in contrast to native soils. Consequently, HSI values for the riparian acreage were not increased over time.

No increases or decreases in habitat acreage across target years were estimated. It was assumed that the continued use of the site for a cattle stockyard would preclude an increase in riparian habitat acreage and habitat complexity.

Martin Island - 80 acres:

Habitat Acreage:

Associated habitat - Agricultural cropland: 10.5 acres
Agricultural cropland: 69.2 acres
Riparian - Associated Habitat: 0.3 acres

Present Use: Current use of site is for cattle pasture. Their presence adversely impacts riparian forest understory , stand recruitment and reestablishment of trees in pasturelands.

Future Without Project: Site would remain in current use pattern.

Future With Project: Disposal would occur on site in 2003 and destroy habitats present.

HEP Analysis: HEP analysis for mitigation determination will be conducted for riparian, farmed wetland, and agricultural cropland, including associated habitat - agricultural at this location. Associated habitat - agriculture was only assigned to those agricultural lands within 200 m of the backwater embayment on the east side of the island. The mainstem of the Columbia River was not considered amphibian habitat because of tidal fluctuations and wave energy along the shoreline. The embayment, while it does experience tidal fluctuation, is well protected and was therefore considered a use area for amphibians.

Farmed wetland acreage occurred in a swale in the north-central portion of the disposal site. The farmed wetland habitat contains physical habitat characteristics of agricultural lands, i.e. pasture. Annual grazing at this location precludes establishment of wetland plants and habitat features, thereby precluding wildlife use by wetland species. Consequently, the farmed wetland was evaluated using agricultural habitat target species and habitat suitability values.

Species evaluated (HEP) for this disposal location were only those species identified for the riparian and agricultural categories. Habitat suitability indices used were those developed for riparian and agricultural habitat.

No increases or decreases in habitat acreage or HSI values for target species across target years were estimated. It was assumed that the continued use of the site for a cattle grazing would preclude an increase in riparian habitat acreage and habitat complexity.

O-77.0 - 28.8 acres

Habitat Acreage:
Dredged Material - 28.8 acres

Present Use: Current use of site is for periodic use for dredged material disposal; riparian habitat is avoided. Gas pipeline goes through site.

Future Without Project: Site would not be used for dredged material disposal in the future. O-77.0 was not identified in the DMMP as a disposal site in the preferred alternative.

Future With Project: Disposal would occur on site in 2003 and destroy riparian habitat present.

HEP Analysis: HEP analysis would occur for this location as riparian invasion, principally by cottonwoods, is estimated to encompass the entire site acreage by the end of project life under the without project condition.

HEP analysis would only address riparian target species. Amphibian use of the site would be as associated habitat.

An increase in riparian habitat acreage across target years 0-50 was estimated. Riparian habitat development will occur on dredged material which will limit vegetative species diversity and structural complexity. This is attributed to lack of soil complexity and the well drained nature of sand in contrast to native soils.

HSI values by species were held to one-third the value calculated from measurement of field values for riparian habitat in Target Years 0, 1, and 5. HSI values were increased to two-thirds the value calculated from measurement of field values for riparian habitat in Target Year 25. The calculated HSI from field measurements in riparian habitat was used for Target Year 50. Target Years 0, 1, and 5 represent years when riparian species, principally cottonwood, are pioneering onto the site and are primarily scattered clumps of shrubs lacking understory riparian shrubs, cavity trees, litter, and down and dead woody material. By Target Year 25 some of the aforementioned features have begun to appear and cottonwoods have attained tree status. Full HSI value was given at Target Year 50 as habitat conditions should be relatively comparable to stands measured.

O-75.8 - 30 **acres**

Habitat Acreage:

Dredged Material - 30 acres

Present Use: Current use of site is for periodic use for dredged material disposal; riparian habitat is avoided.

Future Without Project: Site is a preferred disposal site in DMMS and would remain in current use pattern for project life.

Future With Project: Disposal actions at this location would continue.

HEP Analysis: No HEP analysis would occur for this location as site is dredged material disposal site.

Morse Brothers Gravel Pit: 5 acres

Habitat Acreage: Estimate 5 acres of riparian habitat present.

Present Use: Riparian forest habitat.

Future Without Project: It is assumed that site would remain in existing use pattern for the project life.

Future With Project: Riparian habitat would be impacted in 2003 by construction and placement of dredged material pipeline.

W-70.1 - 50 acres:

Habitat Acreage:

Riparian - Early Successional: 5 acres
Dredged Material: 45 acres

Present Use: Dredged material disposal site; placement of dredged material has not occurred since mid-1980's.

Future Without Project: Site would remain idle except that industrial development is projected to occur after TY-25 and prior to TY-50 on the 50 acre site. Industrial development is assumed based upon population projections for region and the limited land base for industrial firms.

Future With Project: Disposal would occur on site in 2003 and destroy riparian habitat present.

HEP Analysis: HEP analysis for mitigation determination will be conducted for the 5 acres of riparian habitat at this location; no mitigation will be considered for the dredged material portion of the property except for that acreage projected to develop into riparian forest.

Species evaluated (HEP) for this disposal location were only those species identified for riparian habitat. Habitat suitability indices used were those developed for riparian habitat. HSI values by species were held to one-third the value calculated from measurement of field values for riparian habitat in Target Years 0, 1, and 5. HSI values were increased to two-thirds the value calculated from measurement of field values for riparian habitat in Target Year 25. The calculated HSI from field measurements in riparian habitat was used for Target Year 50. Target Years 0, 1, and 5 represent years when riparian species, principally cottonwood, are pioneering onto the site and are primarily scattered clumps of shrubs lacking understory riparian shrubs, cavity trees, litter, and down and dead woody material. By Target Year 25 some of the aforementioned features have begun to appear and cottonwoods have attained tree status. Full HSI value was given at Target Year 50 as habitat conditions should be relatively comparable to stands measured.

An increase in riparian habitat acreage across target years 0-25 was estimated. The riparian habitat present is situated on dredged material which will limit vegetative species diversity and structural complexity. This is attributed to lack of soil complexity and the well drained nature of sand in contrast to native soils. Consequently, HSI values for the riparian acreage were not increased over time.

W-68.7 - 200 acres:

Habitat Acreage:

Riparian - Early Successional: 20 acres
Dredged Material: 180.0 acres

Present Use: Dredged material disposal site; placement of dredged material has not occurred since mid-1980's.

Future Without Project: Site would be used for dredged material disposal; W-68.7 is a DMMS preferred alternative disposal location. Industrial development is projected to occur after TY-25 and prior to TY-50 on the 50 acre site. Industrial development is assumed based upon population projections for region and the limited land base for industrial firms.

Future With Project: Disposal would occur on site in 2003 and destroy riparian habitat present.

HEP Analysis: HEP analysis for mitigation determination will be conducted for the estimated 20 acres of riparian habitat at this location. Riparian habitat at W-68.7 occurs as pioneering clumps of black cottonwoods. No increase in riparian acreage over time was projected for the without project condition as W-68.7 is a DMMP preferred alternative disposal location. Implementation of the DMMP would result in loss of the riparian habitat at W-68.7; this loss is assumed to occur in 2003. General mitigation policy for O&M dredging actions has been to avoid impacts related to disposal practices that would require compensatory mitigation. Portland District, to the extent practicable, has revised both CRCD and DMMP disposal site boundaries to avoid wetland habitat or riparian areas that are ESA Critical Habitat for Snake River salmonids. The riparian inclusions that would be lost at W-68.7 are outside the 300' Critical Habitat boundary.

Current Corps policy for O&M dredging actions requires compensatory mitigation for significant resources present at a site not previously used for dredged material disposal. Thus, riparian habitat at existing dredged material disposal sites, including W-68.7, that would be impacted by DMMP disposal actions would not require compensatory mitigation under Corps policy.

The issue of CRCD mitigation for riparian habitat inclusions at existing disposal locations was discussed at CRCD Interagency HEP team meetings and separately by Portland District feasibility team members. Essentially, it was determined that mitigation for riparian habitat at existing O&M dredged material disposal sites would not be incorporated into the CRCD mitigation effort unless the resource agencies notified Portland District of their opposition to O&M disposal impacts to riparian habitat. This position was relayed to the resource agencies at the March 31, 1997 CRCD Interagency HEP team meeting.

Several of the resource agencies, subsequent to the March 31, 1997 CRCD Interagency HEP team meeting, wrote Portland District requesting that riparian habitat not be impacted by O&M disposal operations. Consequently, Portland District has incorporated compensatory mitigation for riparian habitat present at existing disposal sites and forecast to be lost to CRCD disposal actions into the CRCD mitigation plan.

The determination of riparian habitat acreage for which compensatory mitigation would occur for is based upon the estimated riparian habitat acreage present in 1997. That estimate is 20 acres. Riparian habitat acreage was held static through target year 25; industrial development was forecast to occur at W-68.7 between target years 25 and 50.

Riparian habitat acreage was held static through target year 25 as a compromise situation between the DMMP and CRCD mitigation strategies. The without CRCD project condition would be the DMMP which would entail disposal in 2003. The with project condition for CRCD would also result in dredged material disposal at this site in 2003. This scenario would result in no mitigation for riparian habitat. If W-68.7 were not impacted, riparian habitat acreage would increase as cottonwoods pioneered onto the site and clumps coalesced together. However, increased riparian forest establishment is not forecast for the location. Consequently, a compromise scenario was developed predicated upon estimated riparian habitat acreage at W-68.7 held static over time.

Species evaluated (HEP) for this disposal location were only those species identified for riparian habitat. Habitat suitability indices used were those developed for riparian habitat. HSI values by species were held to one-third the value calculated from measurement of field values for riparian habitat in Target Years 0, 1, and 5. HSI values were increased to two-thirds the value calculated from measurement of field values for riparian habitat in Target Year 25. The calculated HSI from field measurements in riparian habitat was used for Target Year 50. Target Years 0, 1, and 5 represent years when riparian species, principally cottonwood, are pioneering onto the site and are primarily scattered clumps of shrubs lacking understory riparian shrubs, cavity trees, litter, and down and dead woody material. By Target Year 25 some of the aforementioned features have begun to appear and cottonwoods have attained tree status. Full HSI value was given at Target Year 50 as habitat conditions should be relatively comparable to stands measured.

O-64.8 - 54.4 acres

Habitat Acreage:

Riparian - 8.2 acres
Dredged Material - 46.2

Present Use: Current use of site is for periodic placement of dredged material disposal.

Future Without Project: Site would remain in current use pattern. Site O-64.8 is an identified disposal site in the preferred alternative for the DMMP.

Future With Project: Disposal would occur on site in 2006 and destroy riparian habitat present.

HEP Analysis: HEP analysis for mitigation determination will be conducted for the 8.2 acres of riparian habitat at this location; no mitigation will be considered for the dredged material portion of the property.

Species evaluated (HEP) for this disposal location were only those species identified for riparian habitat. Habitat suitability indices used were those developed for riparian habitat.

No increase in riparian habitat acreage across target years 0-50 was estimated for the without project condition as the site will be used for dredged material deposition in the DMMP. Riparian acreage was held static, i.e., at 8.2 acres, across target years.

Analysis of riparian habitat losses at this location and derivation of mitigation follows the discussion presented for site W-68.7. Please refer to the discussion for W-68.7 to ascertain the conceptual approach to riparian habitat mitigation at existing disposal sites.

O-63.5 - 45.9 acres:

Habitat Acreage:

Riparian habitat - 17.5 acres
Dredged Material - 28.4 acres

Present Use: Current use of 24.8 acres at this site is for dredged material disposal. A diked containment area was constructed at this location in 1997 and dredged material placed on the 24.8 acre facility. A 3.5 acre parcel in the southwest corner of the 45.9 acre site and to the west of the diked containment area is an old dredged material disposal area where riparian vegetation has yet to develop. Riparian forest occurs in the 17.5 acres constituting the balance for the 45.9 acre site. Habitat acreage was confirmed from 1997 aerial photography and incorporates the actual boundaries of the diked disposal area used in late 1996.

Future Without Project: The 24.8 acre diked containment area is an identified disposal site in the DMMP preferred alternative and will be used for dredged material disposal in the future. The 17.5 acres of riparian habitat and 3.5 acres of old dredged material lie outside the disposal site footprint identified in the DMMP and would not be impacted by disposal actions.

Future With Project: Disposal would occur on the 45.9 acre site in 2003 and destroy riparian habitat present.

HEP Analysis: HEP analysis for mitigation determination will be conducted for the 17.5 acres of riparian habitat at this location impacted under the with project condition. For the without project condition, it is estimated that riparian habitat would develop over the project life on the 3.5 acres of old disposal site. These 3.5 acres are labeled in the spreadsheet as Riparian Early Successional as their HSI values would differ initially from established riparian habitat (see below). No mitigation will be considered for the 24.8 acre dredged material containment area used in 1997 as the site is scheduled for use in the DMMP.

Species evaluated (HEP) for this disposal location were only those species identified for riparian habitat. Habitat suitability indices used were those developed for riparian habitat. **Riparian Early Succesional:** HSI values by species were held to one-third the value calculated from measurement of field values for riparian habitat in Target Years 0, 1, and 5. HSI values were increased to two-thirds the value calculated from measurement of field values for riparian habitat in Target Year 25. The calculated HSI from field measurements in riparian habitat was used for Target Year 50. Target Years 0, 1, and 5 represent years when riparian species, principally cottonwood, are pioneering onto the site and are primarily scattered clumps of shrubs lacking understory riparian shrubs, cavity trees, litter, and down and dead woody material. By Target Year 25 some of the aforementioned features have begun to appear and cottonwoods have attained tree status.

Full HSI value was given at Target Year 50 as habitat conditions should be relatively comparable to stands measured.

No increase in riparian habitat acreage across target years 0-50 was estimated for the existing dredged material containment area under the without project condition as the site will be used for dredged material deposition with implementation of the DMMP.

Mt. Solo (W-62.0) - 50 acres:

Habitat Acreage:

Wetland - 25 acres
Agricultural cropland (pasture) - 25 acres

Present Use: Current use of site is for cattle pasture, including the area identified as wetland habitat.

Future Without Project: The Mt. Solo property is currently zoned M2 - Manufacturing District. This zoning level provides for heavy industrial uses. This site was annexed into the City of Longview in 1997. It is projected that the site will be developed for heavy industrial purposes by target year 25. Prior to then, use as agricultural pastureland is expected to continue at the current level of intensity.

Future With Project: Disposal would occur on the entire site in 2003.

HEP Analysis: HEP analysis for mitigation determination will be conducted for the agricultural and wetland habitat target species at this location. Associated habitat - agricultural lands were evaluated using agricultural habitat target species and habitat suitability values. The Amphibian Associated Habitat HSI value of 0.21 was used for AH-AG acreage, e.g., those lands within 200m of a wetland, drainage ditch, or backwater channel. All lands at this location were within 200 m of a wetland type. Wetland habitat at this location, although subject to cattle grazing, was evaluated using wetland habitat target species and habitat suitability values. Grazing pressure at this location is minimal and pasture maintenance is less intensive than that observed at other locations, e.g., W-44.0, thus the site supports wetland plants and retains vegetative height and structure roughly comparable to an undisturbed wetland.

Wetland habitat acreage, under the without project condition, is held at 25 acres for the entire project life. The property owner would be required to mitigate for wetland habitat impacts when the property is developed. Retention of the wetland acreage across target years reflects the mitigation requirement for this habitat. Private landowners have no requirement to mitigate for upland habitat, thus, associated habitat - agriculture lands at the location are not included in Target Years 25 and 50 in the without project condition.

W-59.7 (Hump Island): 69 acres.

Habitat Acreage:

Dredged Material: 62 acres.
Riparian - Early Successional: 7 acres.

Site is a existing dredged material disposal location. Cottonwoods are pioneering onto the upland portion of the disposal site as recent disposal actions have been beach nourishment.

Present Use: Present use is for periodic dredged material placement.

Future Without Project: This existing disposal site is not included in the DMMP preferred alternative. Thus, the site would remain idle in the future and riparian habitat development would continue to occur. Most acreage would be assigned to riparian forest by target year 50 except that the higher portions of the existing disposal site would not be changed from a grass-forb community.

Future With Project: Disposal would occur on site in 2003 and destroy the seven acres of riparian habitat present within the disposal site boundary.

HEP Analysis: HEP analysis for mitigation determination will be conducted for the 7 acres of riparian habitat at this location impacted under the with project condition. For the without project condition, it is estimated that riparian habitat would develop over the project life on 55 acres of the old disposal site. The elevated portions of the old disposal site, particularly those areas nearest the channel, are anticipated to be colonized very slowly by trees. High areas on old disposal sites are well drained, thus relatively xeric, and vegetative colonization is typically slow.

Species evaluated (HEP) for this disposal location were only those species identified for riparian habitat. Habitat suitability indices used were those developed for riparian habitat. The Amphibian Associated Habitat HSI value of 0.31 was used for riparian habitat at this location.

HSI values by species were held to one-third the value calculated from measurement of field values for riparian habitat in Target Years 0, 1, and 5. HSI values were increased to two-thirds the value calculated from measurement of field values for riparian habitat in Target Year 25. The calculated HSI from field measurements in riparian habitat was used for Target Year 50. Target Years 0, 1, and 5 represent years when riparian species, principally cottonwood, are pioneering onto the site and are primarily scattered clumps of shrubs lacking understory riparian shrubs, cavity trees, litter, and down and dead woody material. By Target Year 25 some of the aforementioned features have begun to appear and cottonwoods have attained tree status. Full HSI value was given at Target Year 50 as habitat conditions should be relatively comparable to stands measured.

Port Westward I - 50 acres.

Habitat Acreage:

Dredged Material: 50 acres

Site is represented by an old field habitat which probably reflects former fill and use of area for military facility.

Present Use: Site is idle; there is no present use for agriculture or industrial purposes. A road abuts site. A rail line and yard are present on the location.

Future Without Project: Site would remain in current use pattern.

Future With Project: Disposal would occur on site in 2003.

W-44.0 (Puget Island) - 100 acres.

Habitat Acreage:

Wetland: 5.4 acres
Riparian - Degraded: 2.6 acres
Agriculture cropland - 50.1 acres
Associated habitat - Agriculture cropland - 38.1 acres
Other (roads, dwellings, farm buildings) - 3.8 acres

Site is a grazed pasture with small riparian inclusions; drainage ditches are present.

Present Use: Present use is for livestock grazing, rural residences and farm outbuildings. Site is a grazed pasture with small riparian inclusions; drainage ditches are present.

Future Without Project: Site would remain in current use pattern.

Future With Project: Disposal would occur on site in 2003 and destroy habitat value present.

HEP Analysis: HEP analysis for mitigation determination will be conducted for agricultural, riparian and wetland habitat target species at this location. Associated habitat - agricultural lands were evaluated using agricultural habitat target species and habitat suitability values. The Amphibian Associated Habitat HSI value of 0.21 was used for AH-AG acreage, e.g., those lands within 200m of a wetland, drainage ditch, or backwater channel. Wetland habitat at this location, although subject to cattle grazing, was evaluated using wetland habitat target species and habitat suitability values.